

FIG.1

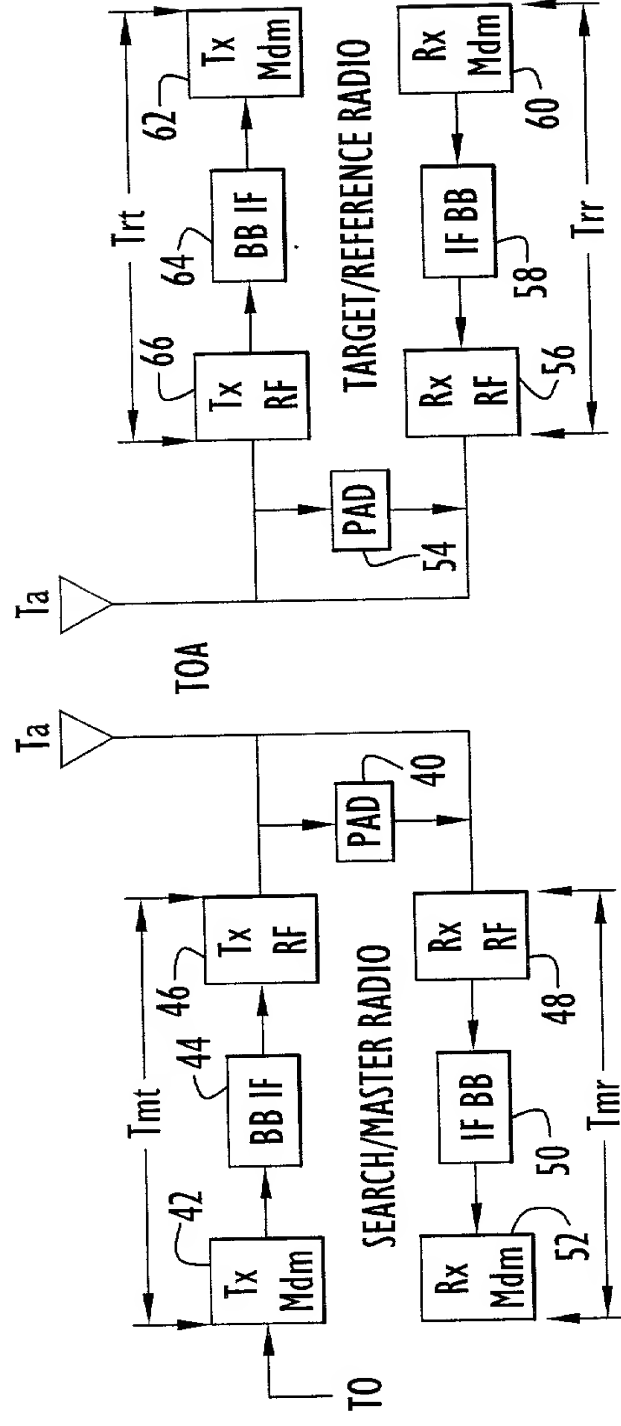


FIG.2

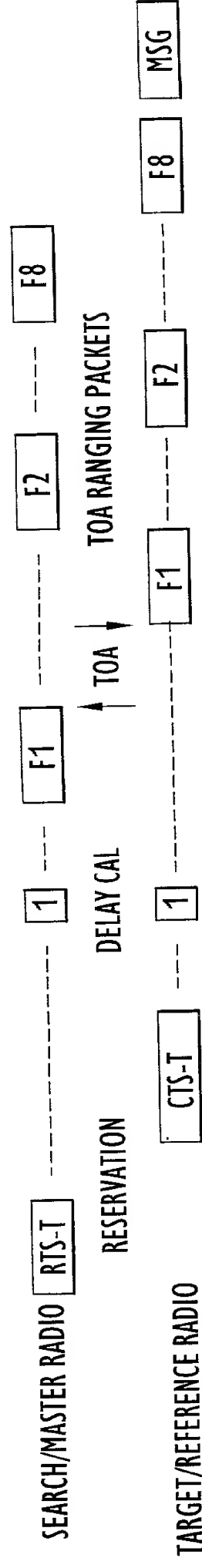
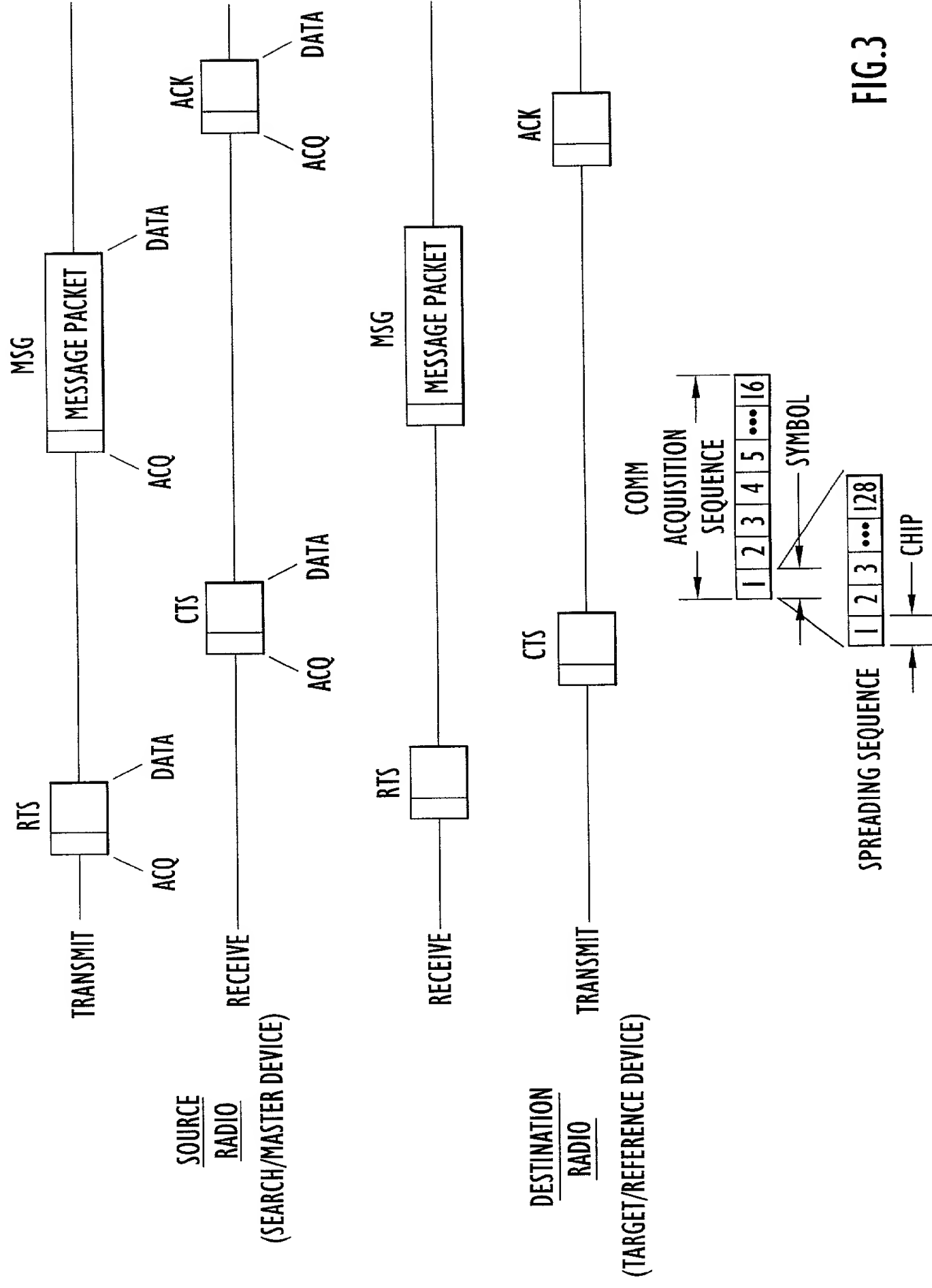


FIG.4

TOA PROTOCOL



RANGING WAVEFORM FOR TOA PROCESSING

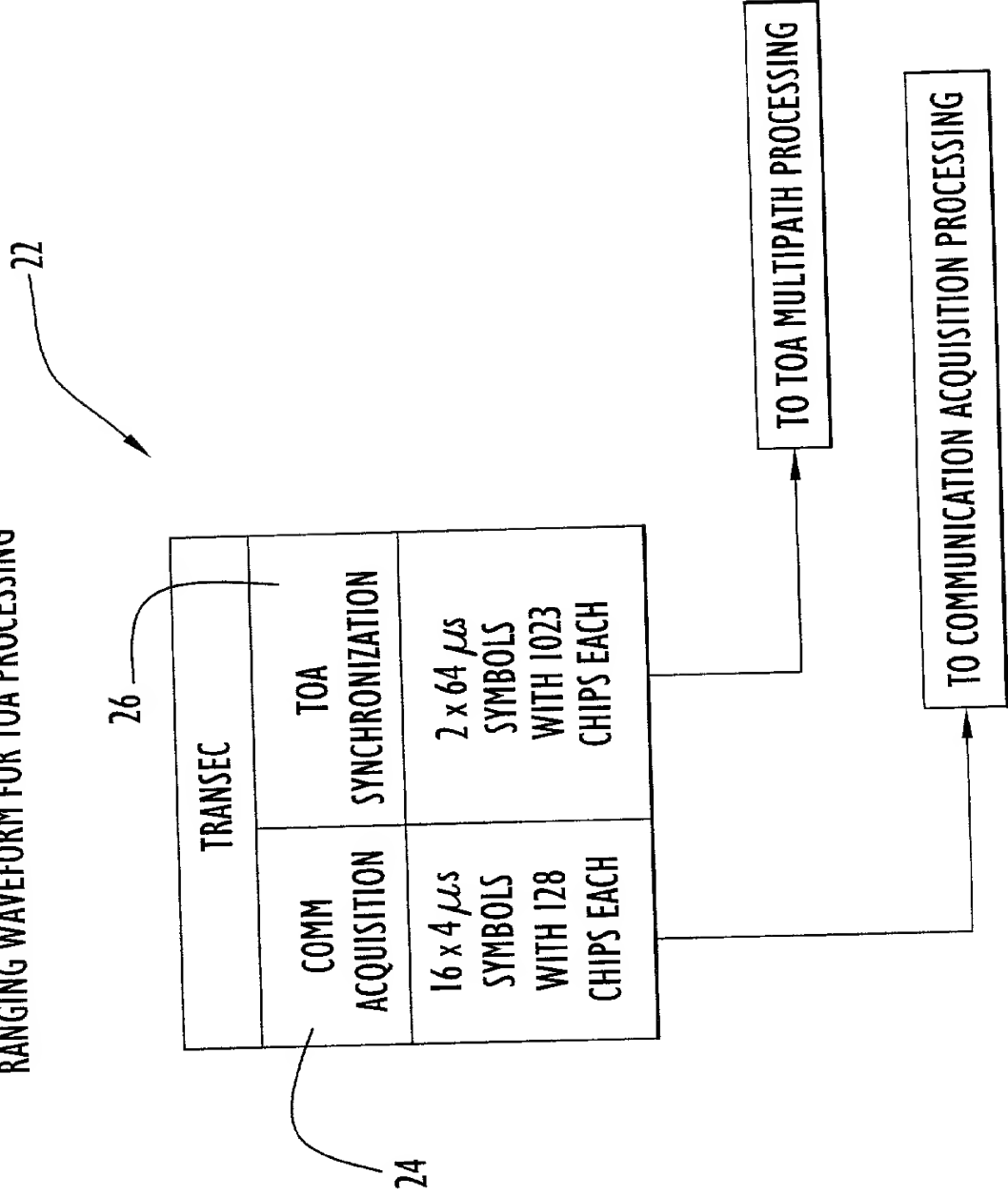


FIG.5

FIG. 6 is a block diagram of a receiver system for a spread spectrum communication system. The system includes a complex signal input from an A/D converter, which is processed by a chip sequence digital matched filter (72). The output of the filter is then processed by a complex unit delay (76) and a complex conjugate (78) block. The output of the conjugate block is then multiplied (80) by the output of the delay block. The result is then processed by a differential detector (74). The output of the differential detector is then processed by a quantizer (84) and a real part extractor (82). The output of the real part extractor is then processed by a symbol sequence correlator (86). The output of the correlator is then processed by a tapped delay line (88) and a detection threshold (88) block. The output of the threshold block is then used to trigger the TOA synchronization.

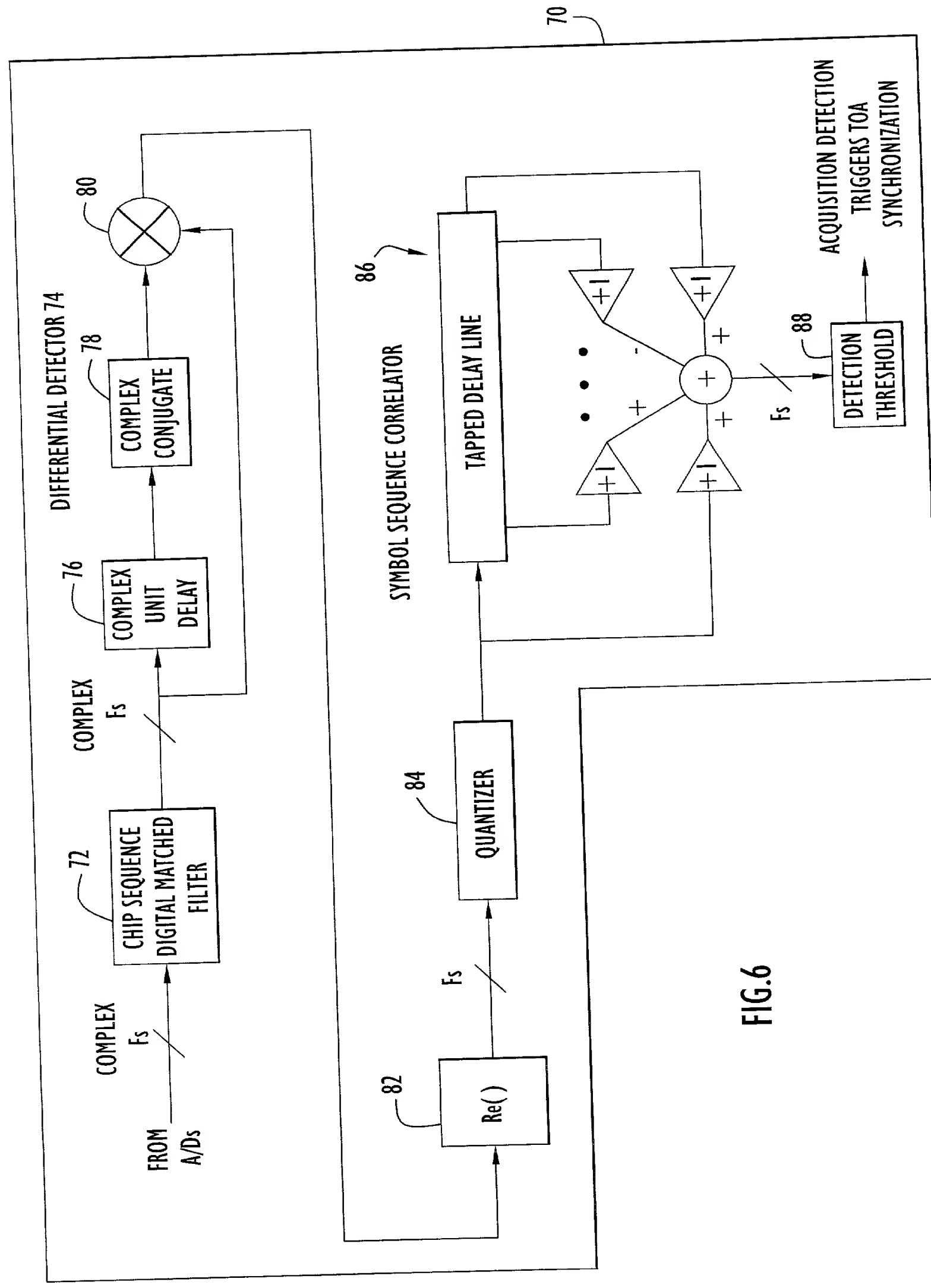
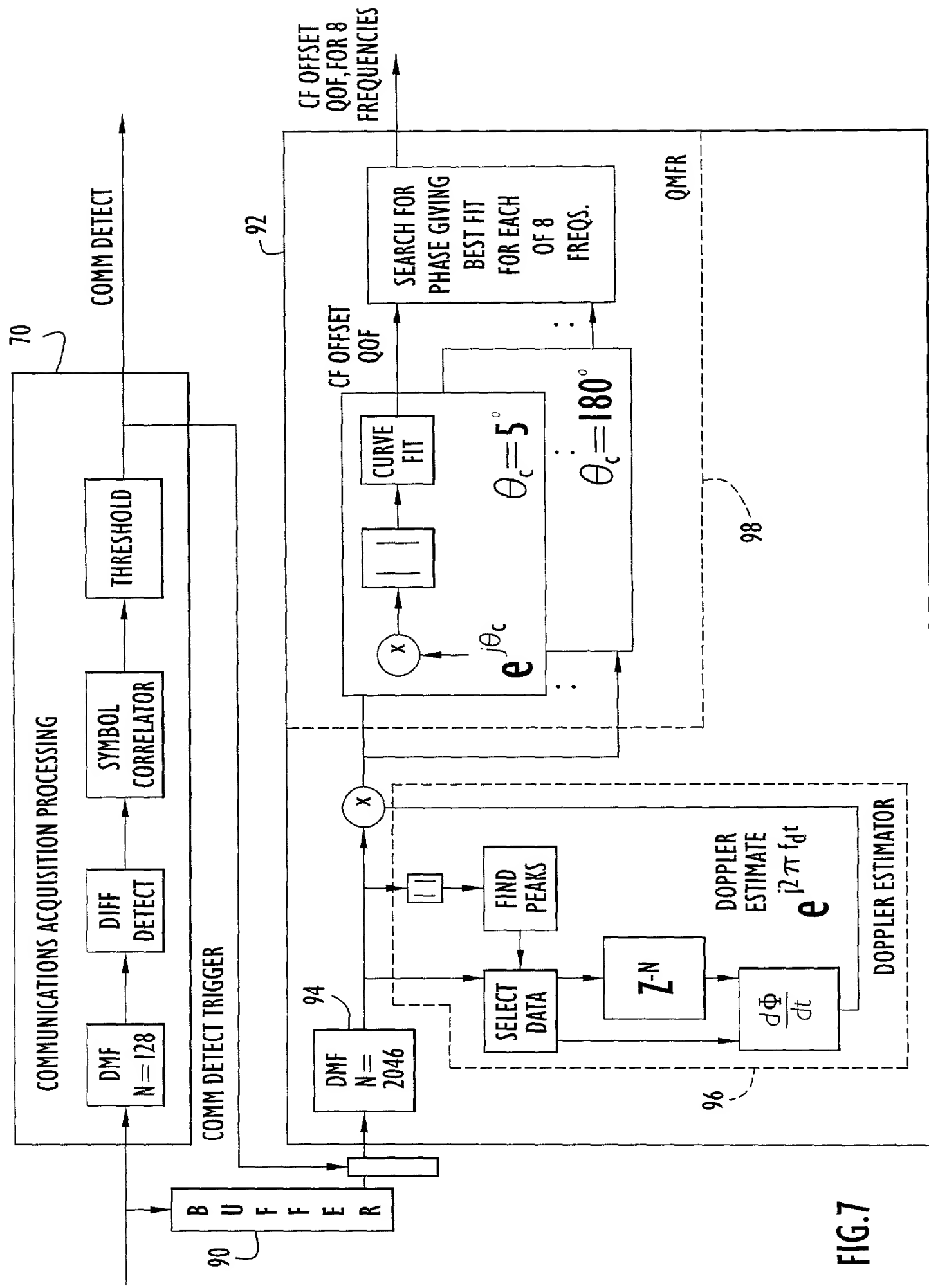


FIG.6



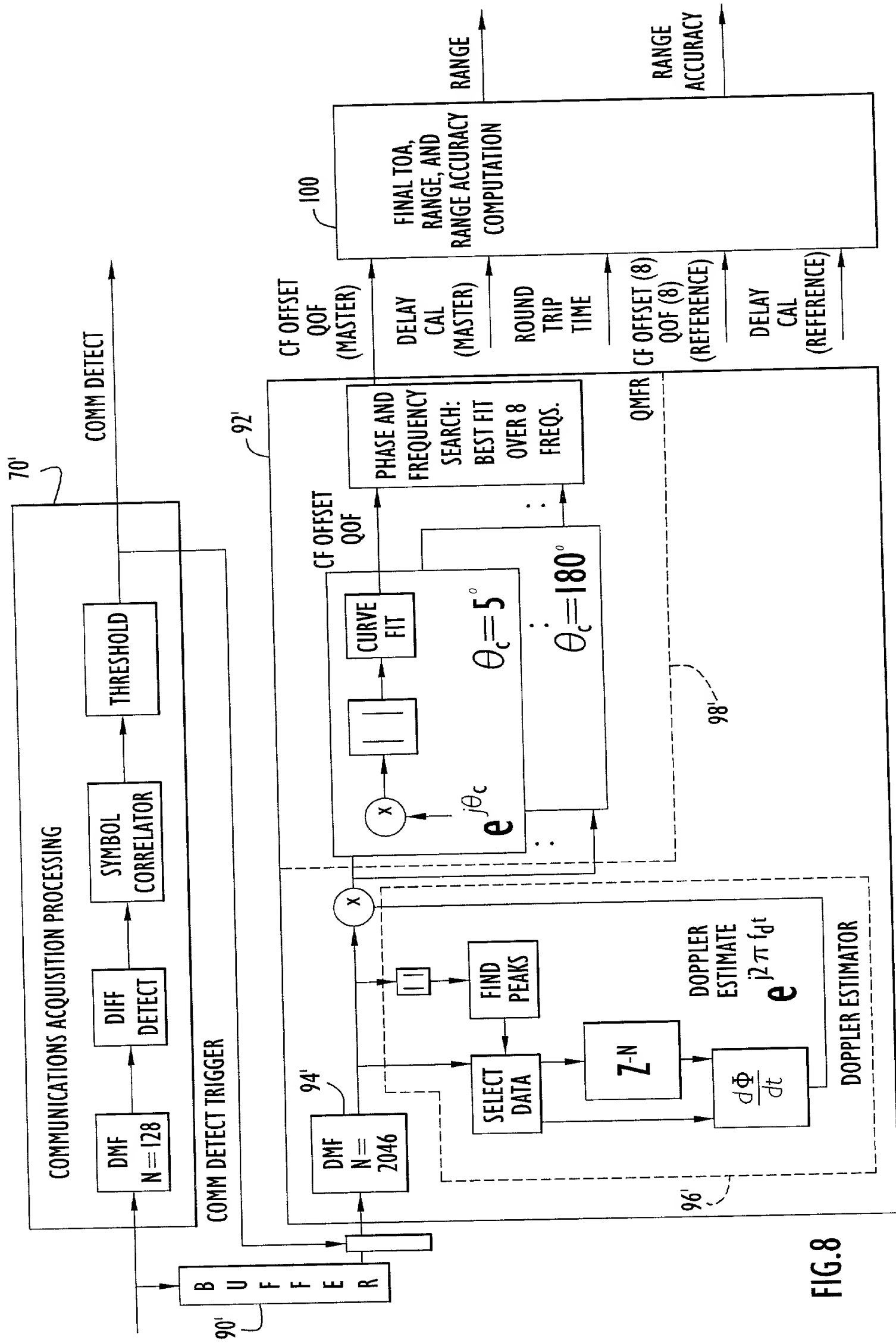


FIG. 8

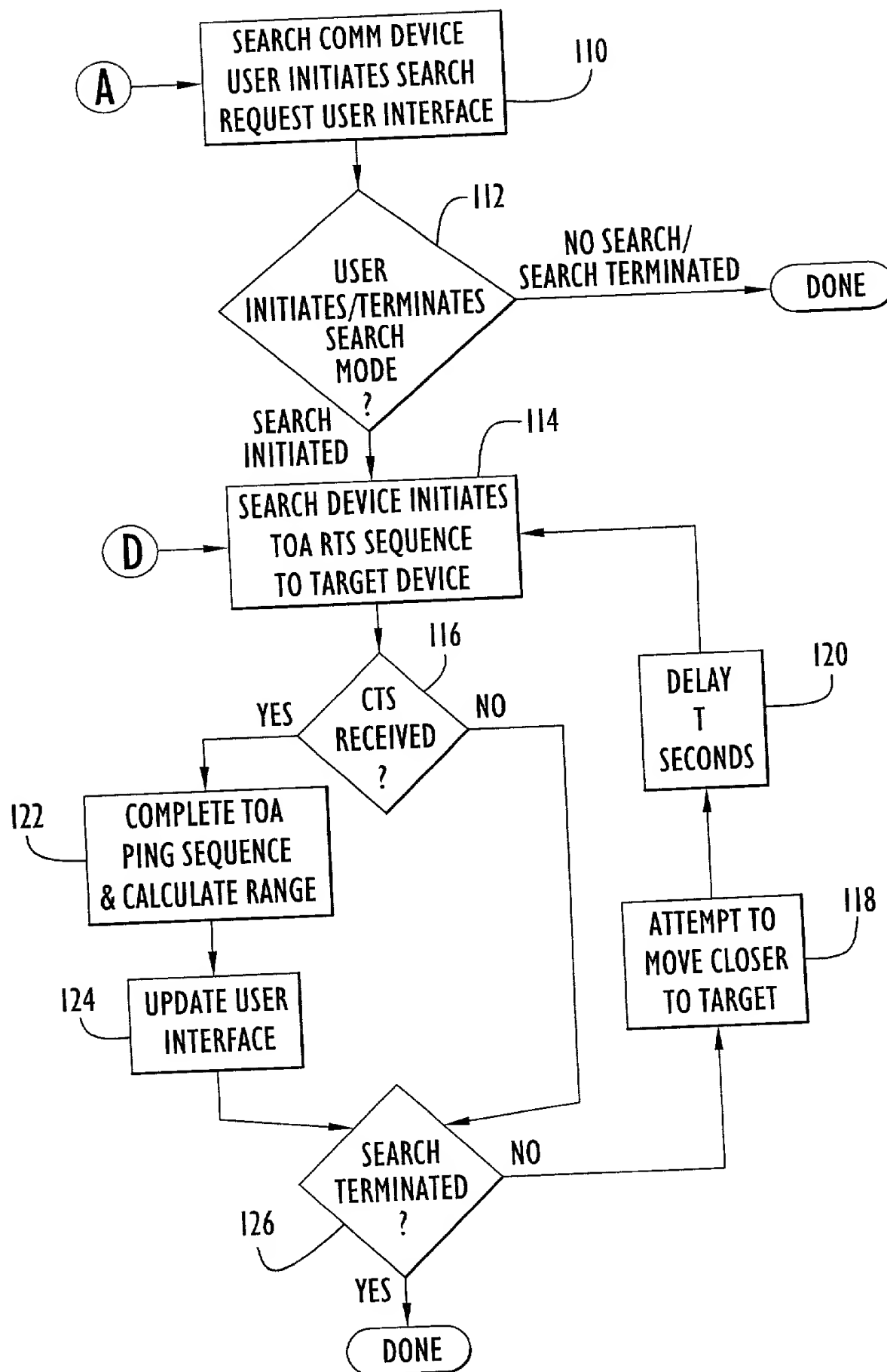


FIG.9



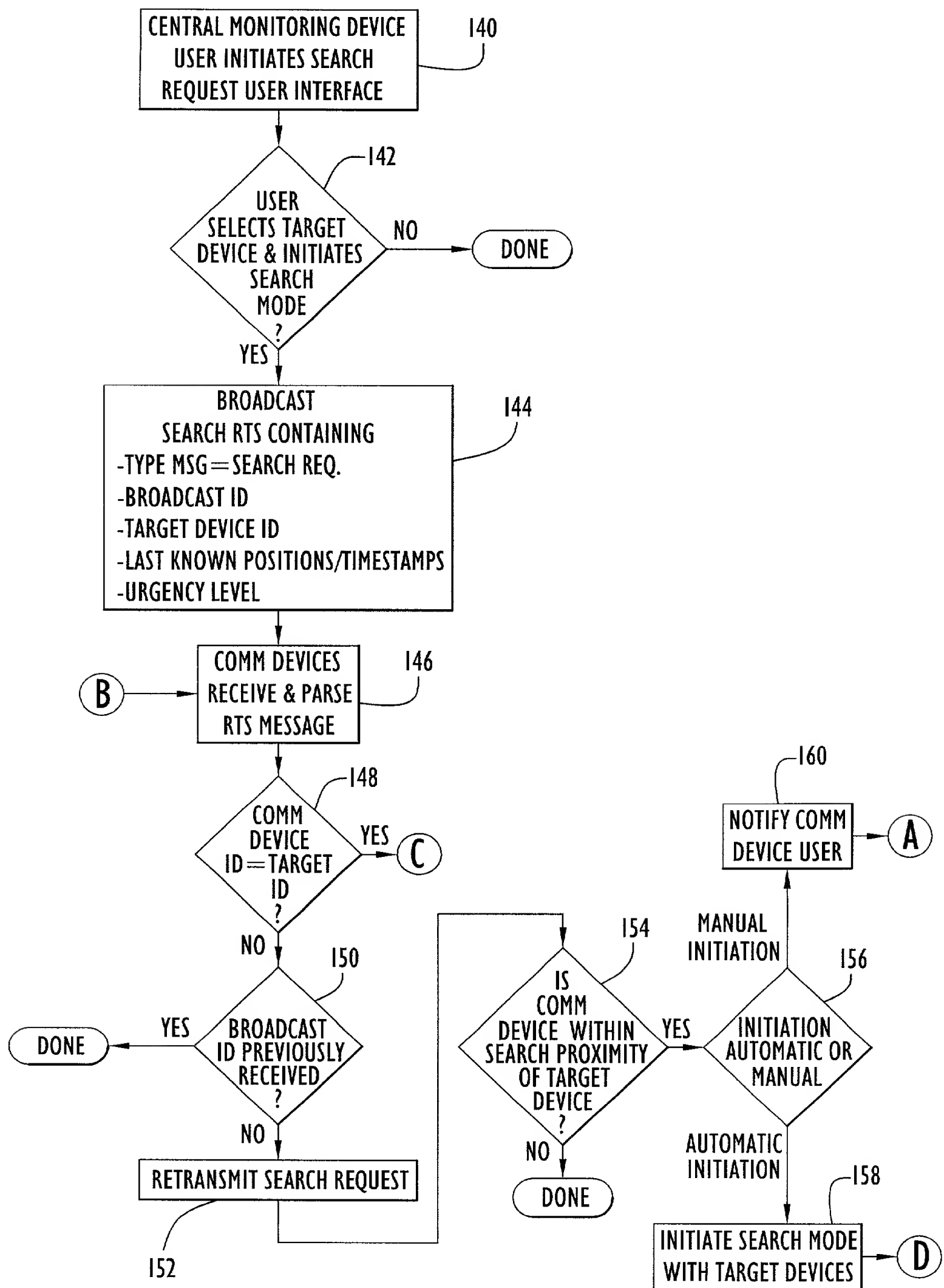


FIG.10

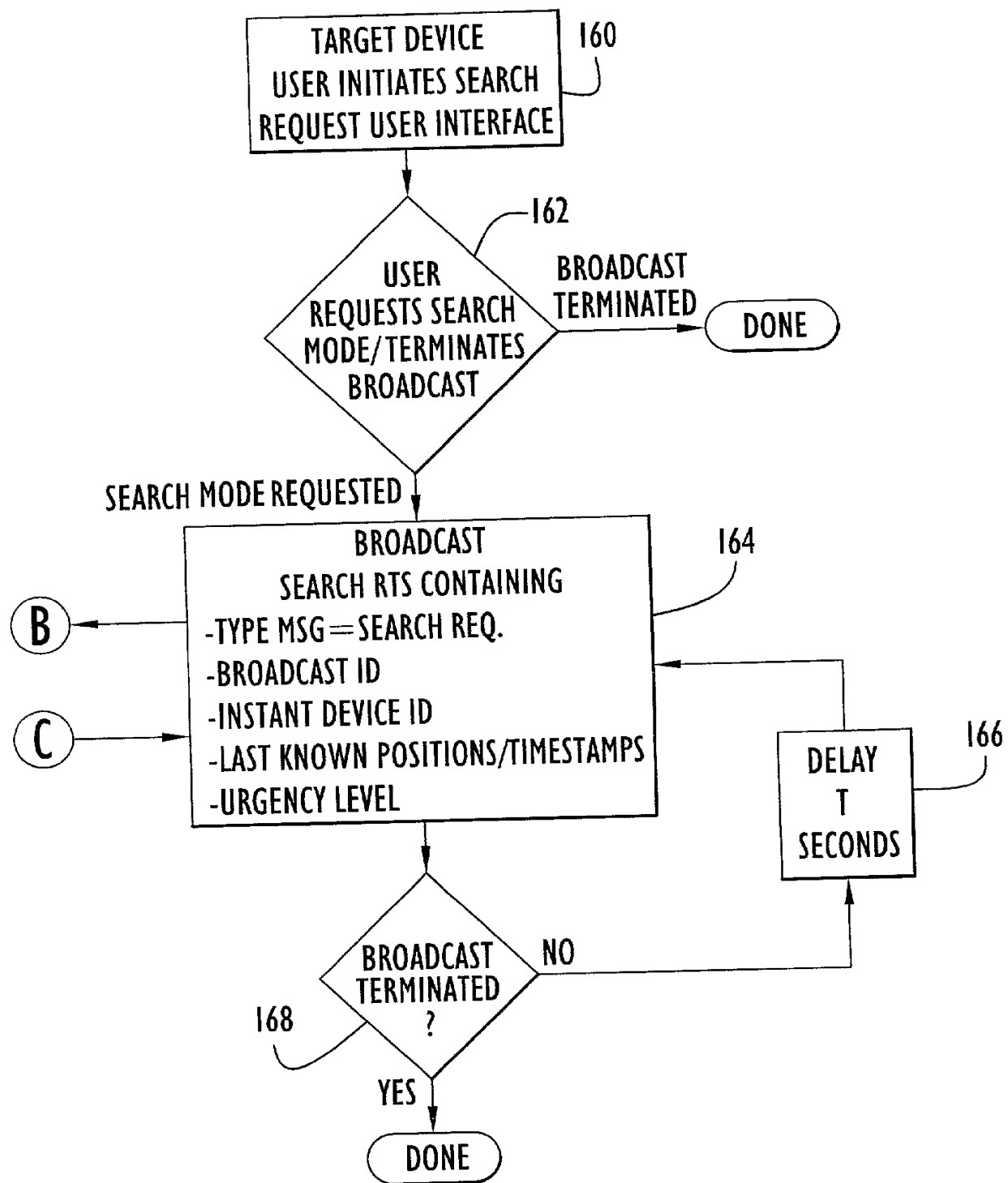


FIG. 11

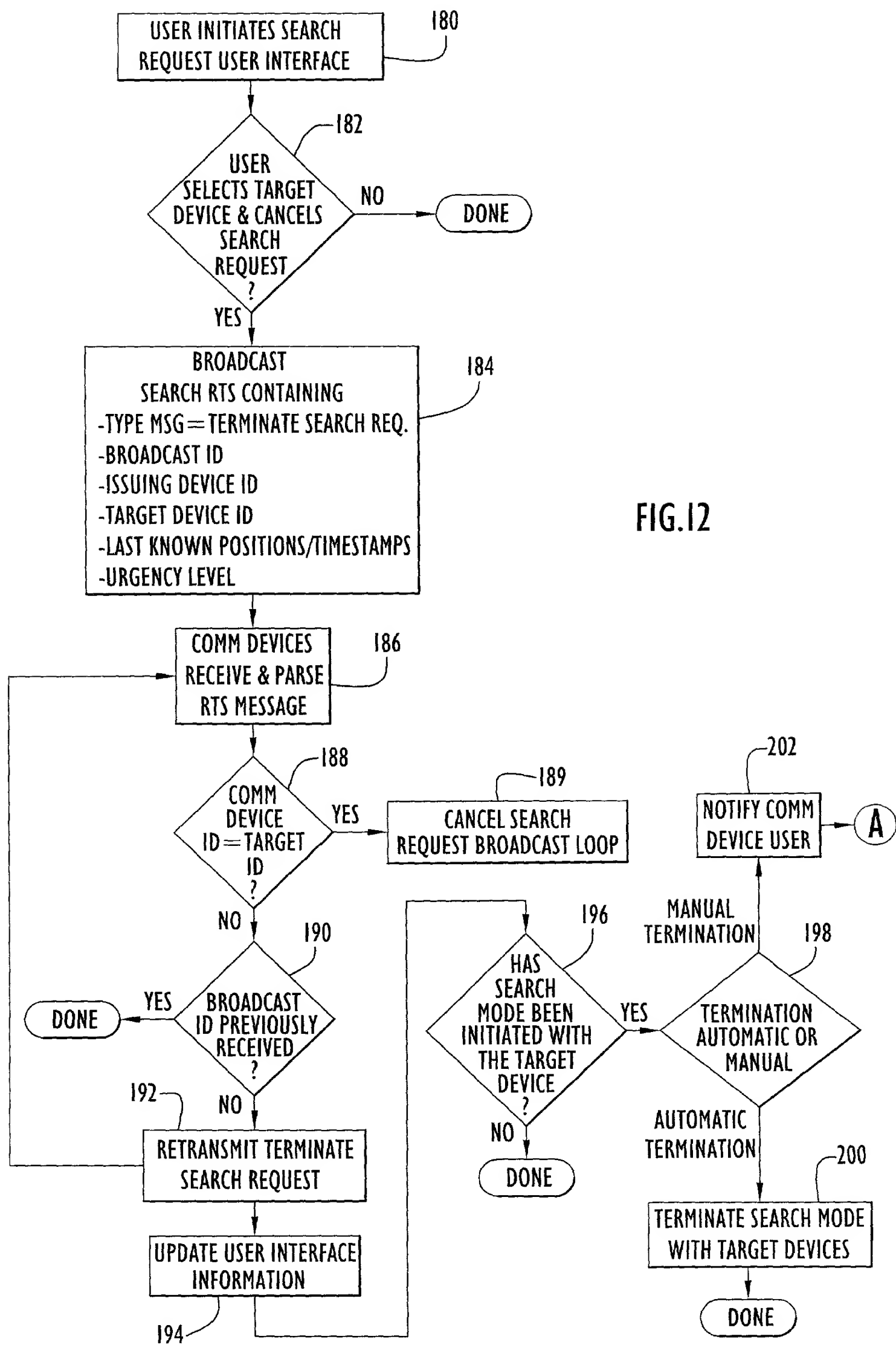


FIG.12